

REMARKS

Claims 1-9 are pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejection in view of the remarks contained herein.

REJECTION UNDER 35 U.S.C. § 103

Claims 1-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Grewell et al. (U.S. Pat. No. 6,528,755) and in further view of Kriege (U.S. Pat. No. 5,408,572). This rejection is respectfully traversed.

Claims 1 and 5 each claim an "...optical device operable to converge light lobes exiting said light transmitting device to define a final beam width, said final beam width being narrower than a beam width exiting said light transmitting device." Claims 8 and 9 each recite methods comprising "...passing said laser beam exiting said lightpipe through an optical horn such that said side light lobe is generally reflected toward said central light lobe..." This arrangement physically narrows the beam of light exiting the optical device, and does not affect the total numerical aperture of the light. Further, an optical horn can be placed at the end of a generally narrowing waveguide, such that the waveguide physically narrows the beam, and the horn angularly narrows the beam.

Kriege, on the other hand, is based upon a different principle from the optical device as claimed in the present application. Kriege discloses an optical taper which reduces the numerical aperture of a beam of light passing through the taper. This approach increases the physical width of the beam.

This characteristic of the device of Kriege is necessary because, as stated specifically throughout the reference, it is directed towards applications where it is important to physically expand the beam. For example, Kriege discloses in the Abstract that “[t]he unit is especially useful for a signal display device for the display of traffic signals” (Abstract, lines 2 – 3). These traffic signal applications generally require an expanded beam of light for improved visibility: “[w]hen installing the conventional signal systems on multiple-lane freeways as well as alongside the road, it is desirable for the emission angle to be wider than required for purely individual track signaling on freeways” (Col. 2, lines 1-5). As such, the invention disclosed by Kriege “is distinguished in that a tapering extension section is provided for obtaining a wider emission angle with a uniform, high light intensity over the entire angular range at the light exit end” (Abstract, lines 11 – 16, emphasis supplied). Kriege states this again at Column 2, lines 13 – 18: “It is an object of the invention to further develop a light-emitting unit... in such a way that an increase in the emission angle is obtained with a uniformly high light intensity over the entire angular range” (emphasis supplied). Finally, Kriege specifically states that the prior art suffers from a “very narrow angular range of +/- 3 degrees” (Col. 5, lines 25 – 26), while the invention of Kriege distributes the light “over an angular range of +/- 6 degrees” (Col. 5, lines 32 – 33).

It is therefore respectfully submitted that Kriege teaches away from the invention as presently claimed, such that one of ordinary skill in the art would not combine Kriege with the other references cited by the Examiner. Rather than narrowing the beam of light, the device disclosed by Kriege widens the beam of light. Further, there is no suggestion anywhere within Kriege to narrow the beam of light, as is required for the

applications to which the present invention is directed. This is because Kriege is directed to applications where it is desirable to widen the beam of light, such as the traffic signal application referenced above. Using the device of Kriege in conjunction with the other cited references would not narrow the beam of light exiting the light-emitting device, and would result in a device that would be ineffective for the stated objective of the present application.

Applicants further assert that the prior art of record fails to disclose or suggest every element of the invention as presently claimed. As quoted above, each independent Claim of the present application recites narrowing a beam of light. Kriege is directed to applications such as traffic signals where it is important to widen the beam of light, and neither discloses or suggests narrowing a beam of light. As such, it is respectfully submitted that the prior art combination cited by the Examiner neither anticipates nor renders obvious the present invention.

In light of the arguments presented above, Applicants believe that independent Claims 1, 5, 8, and 9 are in condition for allowance. Further, Claims 2 – 4, 6, and 7 all depend from Claim 1 or Claim 5, and are therefore believed to be in condition for allowance for the same reasons. Reconsideration and withdrawal of the present rejection is therefore respectfully requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: November 8, 2005

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